

# Male dance flies found to favor females with bigger abdominal air sacs

19 September 2018, by Bob Yirka



Dance fly Credit: Heather Proctor

A team of researchers with the University of Toronto and the University of Stirling has found that male dance flies prefer to mate with females that have larger abdominal sacs. In their paper published in *Proceedings of the Royal Society B*, the group describes their study of the insects and what they found out about their mating habits.

Dance flies are a kind of fly that appear to dance in the air during their mating rituals. They do so in swarms, creating a hypnotic scene for human bystanders. In this new effort, the researchers ventured out into the field to observe one species in action— *Rhamphomyia longicauda*.

The researchers note that ornamentation in males of various species as it relates to mating has been extensively documented—less so is ornamentation in [females](#). Female dance flies have abdominal sacs on the sides of their abdomens that they fill with air, possibly to make them look bigger. They also have pinnate leg scales, which look like hairy legs, another feature that can make the female

look bigger.

In studying the [mating](#) behavior of the flies, the researchers found that the females would pull in air just before joining a swarm, and use it to fill their sacs. They also pulled in their legs, forcing them parallel to their abdomens. The researchers describe the result as females that look similar to helicopters in flight. The next part of the dance was up to the males. Each approached the swarm and made assessments of the females they encountered—when a choice was made, the couple engaged and fell out of the swarm.



Dance fly. Credit: David Funk

A closer look revealed that the males displayed preferences—they wanted females who had bigger sacs. And if faced with females of equally sized sacs, they chose the one with the hairier legs.

The researchers suggest the preference of the males might be due to the perception that bigger females carry more eggs. But what do the females get in return? The researchers note that when the males choose a mate, they bring along a meal to share with her. And the females mate more than

once, so the more mates she attracts, the more she gets to eat.

**More information:** Rosalind L. Murray et al.  
Sexual selection on multiple female ornaments in dance flies, *Proceedings of the Royal Society B: Biological Sciences* (2018). [DOI: 10.1098/rspb.2018.1525](https://doi.org/10.1098/rspb.2018.1525)

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